

AMENDMENTS TO THE SPECIFICATION:

Referring now to Figure 4, a front view of the motion base 104 is illustrated with motion plate 112 shown in its nominal (that is, horizontal) position. In the nominal position, support plate is substantially parallel to the floor and to support plate 108. It is interesting to note that in the nominal position, the longitudinal axis of each crank 214 is also substantially parallel to support plate 108. Further, in the nominal position, flanges 120 are aligned substantially over the respective drive shaft 402 of each motor.

However, because drive arm linkage 118 are coupled to the outer end of crank 214, each linkage 118 is slightly splayed rather than in vertical alignment. Thus, during operation of personal simulator system 102, a roll motion of platform 112 to the left is achieved by rotating the left crank 214L downwards towards support plate 108 while crank 214R rotates upward. As used herein roll refers to motion about a horizontal axis out the front of the motion base. In this manner, motion plate 112 is oriented with an extreme tilt to the left as illustrated with the dashed motion plate and drive arm linkages shown. In the embodiment illustrated in Figure 4, the pitch and roll motion provides an angle of about 17 degrees although during operation of the personal simulator, smaller angles are preferred – for example about three degrees (3°) to about five degrees (5°).

It is understood that varying the length of the cranks associated with the each of the front motors and the height of the drive shaft 402 relative to support plate 108 the amount of maximum roll may be selected as an engineering design choice. It is also possible to provide pitch so that the motion plate 112 turns about a lateral axis such that the front edge of motion plate 112 will either rise or fall in relation to the rear of motion plate 112. Pitch is provided by operation of motor 208C. If the roll or pitch angle of greater than about fifteen degrees (15°) is required for a particular application, motors 208 may need to ~~by~~ be attached to an elevated platform to allow sufficient rotation of the cranks 214. Thus, by controlling each of the cranks associated with the left, right and rear motors, it is possible to cause the rider to tilt left or right or pitch forward or rearward. To increase the sensation of a rapid pitch, operation of motors 208L and R in tandem will raise the front edge without any roll ~~and by~~ while operation of the rear motor

208C lowers the rear edge of the motion plate 112 ~~is lowered~~. Also, by operating all three motors in tandem, a heave motion (up or down motion without roll or pitch) is imparted to motion plate 112. The slip spline of support pedestal 110 in the illustrated embodiment enables the support pedestal to extend by about 10 cm as the push rods
5 move upward ~~but also returns~~ and return to its nominal alignment ~~down~~ as the linkages 118 are lowered.